

## SEQUENCE LISTING

<110> Children's Medical Center Corporation  
 Ashkar, Samy

<120> Method to Screen Peptide Libraries Using Minicell Display

<130> CMCC 820

<150> US 60/306,946  
 <151> 2001-07-20

<150> 60/274,039  
 <151> 2001-03-07

<160> 53

<170> PatentIn version 3.1

<210> 1  
 <211> 63  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Primer 1 harboring Xba 1 site (for construction of N-terminal fragment of the 17K antigen).

<400> 1  
 tctagaatga aactttttatc taaaattatg attatagctc ttgcaacttc tatgttag  
 cc 60  
 gcc  
 63

<210> 2  
 <211> 67  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Primer 2 (for construction of the N-terminal fragment of the 17K antigen).

<400> 2  
 tcggcggaca ttgccaggcc cgccatactt atttgttcca tgccttgtg aagaaccg  
 cc 60

acgaccg

67

&lt;210&gt; 3

&lt;211&gt; 49

&lt;212&gt; DNA

&lt;213&gt; Artificial sequence

&lt;220&gt;

<223> Primer 3 (for construction of the N-terminal fragment of the 17K antigen).

&lt;400&gt; 3

ggcgggtgctg gcggcgcatt acttggttct caattcggta agggcaaag

49

&lt;210&gt; 4

&lt;211&gt; 75

&lt;212&gt; DNA

&lt;213&gt; Artificial sequence

&lt;220&gt;

<223> Primer 4 harboring BamH1 site (for construction of the N-terminal fragment of the 17K antigen)

&lt;400&gt; 4

cccgtttcct gtcgaacaac ctcatccaca tccacgtaat gaacctcgtc aagaacca  
cc 60

tgtttagccg gatcc

75

&lt;210&gt; 5

&lt;211&gt; 71

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

<223> First 71 amino acids of the 17 K antigen of Rickettsia rickettsii

&lt;400&gt; 5

Met Lys Leu Leu Ser Lys Ile Met Ile Ile Ala Leu Ala Thr Ser Met

```

<210> 6
<211> 213
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA encoding the N-terminus of the 17K antigen of Rickettsia
tsia rickettsiae.

<400> 6
atgaaacttt tatctaaaat tatgattata gctcttgcaa cttctatggt agccgcct
gt 60

aacggtccgg gcggtatgaa taaacaagggt acaggaacac ttcttggcgg tgctggcg
gc 120

gcattacttg gttctcaatt cggttaagggc aaaggacagc ttgttggagt aggtgtag
gt 180

gcattacttg gagcagttct tgggtggacaa atc
213

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Page 3

<211> 4  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibitor of macrophage recruitment.

<400> 7

Val Leu Glu Pro  
 1

<210> 8  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Inhibitor of cell/collagen interaction.

<400> 8

Asp Asp Asp Arg Lys Trp Gly Phe Cys  
 1 5

<210> 9  
 <211> 9  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibitor of cell/collagen interaction.

<400> 9

Asp Gln Asp Gln Arg Trp Gly Tyr Cys  
 1 5

<210> 10  
 <211> 9  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibitor of cell/collagen interaction

<400> 10

Asp Arg Asp Arg Ala Trp Gly Tyr Cys  
1 5

<210> 11

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Inhibitor of cell/collagen interaction.

<400> 11

Asp Arg Gln Trp Gly Leu Cys  
1 5

<210> 12

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> Inhibitor of cell/collagen interaction.

<400> 12

Asp Ala Asp Gln Lys Phe Gly Phe Cys  
1 5

<210> 13

<211> 17

<212> PRT

<213> Artificial sequence

<220>

<223> Inhibitor of cell/collagen interaction

<400> 13

Glu Ser His Gln Lys Tyr Gly Tyr Cys Gly Gly Cys Asp Arg Asn Asn

1

5

10

15

Pro

<210> 14  
 <211> 10  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibitor of heparin binding.

<400> 14

Asp Ser Val Val Tyr Gly Leu Arg Ser Lys  
 1 5 10

<210> 15  
 <211> 10  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibitor of heparin binding.

<400> 15

Asp Ser Val Ala Tyr Gly Leu Lys Ser Lys  
 1 5 10

<210> 16  
 <211> 12  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibitor of heparin binding.

<400> 16

Asp Ser Val Ala Tyr Gly Leu Lys Ser Arg Ser Lys  
 1 5 10

<210> 17  
 <211> 15  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Cell attachment/ alpha v beta x specific.

<400> 17

Thr Pro Val Val Pro Thr Val Asp Thr Tyr Asp Gly Arg Gly Asp  
1 5 10 15

<210> 18

<211> 19

<212> PRT

<213> Artificial sequence

<220>

<223> Cell attachment/ alpha v beta x specific.

<400> 18

Thr Pro Phe Ile Pro Thr Glu Ser Ala Asn Asp Gly Arg Gly Asp Ser  
1 5 10 15

Val Ala Trp

<210> 19

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Promotes cell entry of peptides.

<400> 19

Cys Val Val Val Leu Val Leu  
1 5

<210> 20

<211> 5

<212> PRT

<213> Artificial sequence

<220>

<223> Inhibits alpha 4 integrin binding.

<400> 20

Leu Asp Ser Ala Ser

1

5

<210> 21  
 <211> 9  
 <212> PRT  
 <213> Artificial sequence  
  
 <220>  
 <223> Inhibits alpha 4 integrin binding.  
  
 <400> 21

Leu Asp Ser Pro Pro Ala Ala Leu Ser  
 1 5

<210> 22  
 <211> 8  
 <212> PRT  
 <213> Artificial sequence  
  
 <220>  
 <223> Inhibits alpha 4 integrin binding.  
  
 <400> 22

Ala Ala Asp Val Glu Ser Pro Ser  
 1 5

<210> 23  
 <211> 14  
 <212> PRT  
 <213> Artificial sequence  
  
 <220>  
 <223> Inhibits alpha 4 integrin binding.  
  
 <400> 23

Trp Thr Gly Gly Asp Asp Ser Gly Ser Pro Ser Ser Pro Ser  
 1 5 10

<210> 24  
 <211> 3  
 <212> PRT  
 <213> Artificial sequence  
  
 <220>



<223> Inhibits alpha 4 integrin binding.

<400> 24

Ser Asp Val

1

<210> 25

<211> 14

<212> PRT

<213> Artificial sequence

<220>

<223> Inhibits alpha 4 integrin binding.

<400> 25

Glu Pro Glu Glu Ser Asp Val Gly Gly Ala Ala Asp Tyr Pro

1

5

10

<210> 26

<211> 16

<212> PRT

<213> Artificial sequence

<220>

<223> Inhibits alpha 4 integrin binding.

<400> 26

Gln Glu Ser Pro Ser Gly Thr Asp Leu Leu Val Ala Gly Ser Ser Pro

1

5

10

15

<210> 27

<211> 19

<212> PRT

<213> Artificial sequence

<220>

<223> beta integrin binding.

<400> 27

Thr Pro Val Val Pro Thr Val Asp Thr Tyr Asp Gly Arg Gly Asp Ser

1

5

10

15

Leu Ala Tyr

<210> 28  
 <211> 16  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> beta 3 attachment.

<400> 28

Asp Lys Lys Glu Leu Ala Lys Phe Gln Ala Glu Arg Ser Ala Ala Ser

1 5 10 15

<210> 29  
 <211> 17  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> beta 3 attachment.

<400> 29

His Asp Arg Lys Glu Phe Ala Lys Phe Glu Glu Glu Glu Arg Ala Arg

1 5 10 15

Ala

<210> 30  
 <211> 16  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> beta 3 attachment.

&lt;400&gt; 30

His Asp Arg Arg Glu Phe Ala Lys Phe Gln Ser Glu Arg Ser Arg Ala

1

5

10

15

&lt;210&gt; 31

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; beta 3 attachment.

&lt;400&gt; 31

His Asp Arg Lys Glu Val Ala Lys Phe Glu Ala Glu Arg Ser Lys Ala

1

5

10

15

&lt;210&gt; 32

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; beta 3 attachment.

&lt;400&gt; 32

Gln Ser Trp Lys Lys Gln Gly Ser Pro Ser Ser Pro Gln Arg Arg Ser

1

5

10

15

Lys Gly Gly Arg Lys Pro

20

&lt;210&gt; 33

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; Endothelial cell attachment.

<400> 33

Ser Asp Gln Asp Asn Asn Gly Lys Gly Ser His Glu Ser  
1 5 10

<210> 34

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> Endothelial cell attachment.

<400> 34

Ser Asp Gln Asp Gln Asp Gly Asp Gly His Gln Asp Ser  
1 5 10

<210> 35

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Fibronectin receptor binding collagenase induction.

<400> 35

Gly Arg Gly Asp Asn Pro Ser  
1 5

<210> 36

<211> 17

<212> PRT

<213> Artificial sequence

<220>

<223> Fibronectin receptor binding collagenase induction.

<400> 36

Leu Val Pro Ser Ser Lys Gly Arg Gly Asp Tyr Leu Ala Gln Ser Gln  
1 5 10 15

Pro

<210> 37  
 <211> 10  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits fibroblast attachment, inhibits collagenase induction.

<400> 37

Pro Asn Gly Arg Gly Glu Ser Leu Ala Tyr  
 1 5 10

<210> 38  
 <211> 9  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits melanoma cell attachment.

<400> 38

Asp Arg Tyr Leu Lys Phe Arg Pro Val  
 1 5

<210> 39  
 <211> 17  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits melanoma cell attachment.

<400> 39

His Lys Phe Val His Trp Lys Lys Pro Val Leu Pro Ser Gln Asn Asn  
 1 5 10 15

Gln

<210> 40  
 <211> 8  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits neutrophils, endothelium, fibrosarcomas, melano  
 ma attach  
 ment.

<400> 40

Lys Gly Met Asn Tyr Thr Val Arg  
 1 5

<210> 41  
 <211> 8  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits endothelial cell attachment.

<400> 41

Asp Pro Gly Tyr Ile Gly Ser Arg  
 1 5

<210> 42  
 <211> 17  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits endothelial cell attachment.

<400> 42

Val Leu Pro Thr Pro Thr Pro Pro Gly Tyr Leu Ser Ser Arg Ser Ser  
 1 5 10 15

Arg

<210> 43  
 <211> 15  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits CD44 interaction with GAG.

<400> 43

Lys Asn Asn Gln Lys Ser Glu Pro Leu Ile Gly Arg Lys Lys Thr  
 1 5 10 15

<210> 44  
 <211> 20  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits CD44 interaction with GAG.

<400> 44

Tyr Tyr Trp Arg Gln Gln Gln Lys Ser Asp Pro Val Val Ser Arg Arg  
 1 5 10 15

Arg Ser Pro Ser  
 20

<210> 45  
 <211> 7  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Anti-angiogenic.

<400> 45

Ala Thr Trp Leu Pro Pro Arg  
 1 5

<210> 46  
 <211> 8

<212> PRT  
 <213> Artificial sequence

<220>  
 <223> Anti-angiogenic.

<400> 46

Gln Val Gly Leu Lys Pro Leu Val  
 1 5

<210> 47  
 <211> 14  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Anti-angiogenic

<400> 47

Thr Pro Thr Val Arg Gly Ala Ala Gly Ser Gly Asn Gln Asn  
 1 5 10

<210> 48  
 <211> 15  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Inhibits homotypic aggregation of tumor cells.

<400> 48

His Gly Arg Phe Ile Leu Pro Trp Trp Tyr Ala Phe Ser Pro Ser  
 1 5 10 15

<210> 49  
 <211> 9  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Anti-adhesion (cell-cell).

<400> 49

Lys Lys Ala Lys Lys Ser Arg Arg Ser



1 5

<210> 50  
 <211> 9  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Anti-adhesion (cell-cell).

<400> 50

Lys Lys Gly Lys Lys Ser Lys Arg Ser  
 1 5

<210> 51  
 <211> 20  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Anti-adhesion (cell-cell)

<400> 51

Arg Arg Ser Arg Ser Ser Thr Gly Lys Lys Gln Lys Ser Ser Gln Ser  
 1 5 10 15

Arg Lys Thr Ala  
 20

<210> 52  
 <211> 43  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Apoptotic to tumor cells.

<400> 52

Asp Gly Gly Arg Gly Asp Ser Leu Gly Trp Tyr Arg Arg Gly Arg Gly  
 1 5 10 15

Gly Ala Arg Arg Ser Lys Ala Lys Lys Ala Ala Ala Lys Asn Asn Gln

20

25

30

Lys Ser Glu Pro Leu Ile Gly Arg Lys Lys Thr

35

40

<210> 53

<211> 4

<212> PRT

<213> Artificial sequence

<220>

<223> Apoptotic to tumor cells.

<400> 53

Lys Arg Ser Arg

1